SPECIFICATION BULLETIN LP-0862-B

Q-PANEL
Aluminum Panels

Summary

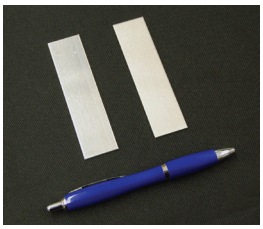
Q-PANEL® aluminum test substrates from Q-Lab minimize metal variability as a source of bias in critical tests. They are clean, consistent, convenient, and economical. A wide range of panel sizes and types are available for immediate shipment from stock.

Aluminum panels are often more convenient to use than steel because of their light weight and corrosion resistance. Aluminum panels can be used to replace steel for sales samples, color standards, mailing and even for weathering tests.

Panels are stored completely clean and, in most cases, can be used right out of the box.

Bare Aluminum Panels (Type A) are made from alloy 3003 H14 and they are 0.025" (0.64 mm) thick. Type A is our standard aluminum panel. Alloy 3003 H14 is now the most widely used general purpose aluminum alloy from coil stock.

Chromated Aluminum Panels (Type AL) are made from alloy 3003 H14. They are 0.025" (0.64 mm) thick and are similar to Type A, except they are treated with a chromium conversion coating which improves paint adhesion and resistance to underfilm corrosion. Most aluminum is given such a pretreatment prior to painting.

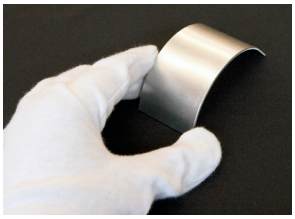


Aluminum Adhesion Panels (Type AD and Type AR) are made from alloy 2024 T3 and are 0.063" (1.6 mm) thick. They are heavy gauge and made from a high strength aluminum alloy to resist the stress of adhesive testing. Type AR is plain (bare) and Type AD is "Alclad" or laminated with a thin coat of pure aluminum for improved corrosion resistance. These panels do not have our signature, trademarked Q-shaped hole.

Automotive Styling Panels (Type SPC and Type SPA) are made from coated or bare smooth finish, series-3000 aluminum. They are 15 x 24" and 0.025" thick (381 x 610 x 0.64 mm). They are curved and have a horizontal bend along the center to mimic the side panel of an automobile. Coatings applied to styling panels reflect light in a manner similar to a coating on an actual automobile side panel. Panels are available in a white, coil coated polyester finish or in bare aluminum. Rounded corners and hanging holes are available upon request.

Automotive Styling Panels mimic the side panel of a car.

Large Display Panels (Type L-1424) are made from smooth finish, series-3000 aluminum. They are 14 x 24 inches (356 x 610 mm), with round corners and a hanging hole. They are useful for evaluating and displaying paints and coatings anywhere a large format is needed.



Bare Aluminum Panels (Type AQ and ALQ) are made from alloy 5005 H24 and are 0.032" (0.81 mm) thick. Type AQ panels are offered in Europe to meet Qualicoat requirements. Type ALQ panels are chromium conversion coated.

Curved and Custom Panels are available for unique needs. Please see page 4 for further details.

Q-LAB

A) Q-PANEL Alloys, Mechanical Properties and Relevant Standards

Q-Lab Corporation certifies that Q-PANEL Brand Test Substrates, type Aluminum, designation "A", "AL", "AR", "AD", "AQ", and "ALQ" comply with the specifications found in the following tables.

Table 2. Mechanical Properties & Standards Met by Q-PANEL Test Substrates

	Type A	Type AL	Type AR	Type AD	Type AQ	Type ALQ
Aluminum Assoc. Material Designation	3003 H14	3003 H14	2024 T3 Bare	2024 T3 Alclad	5005 H24	5005 H24
ASTM Material Specifications	B209	B209, B449-Class 2	B209	B209	B209	B209, B449-Class 2
AMS Material Specifications	QQ-A-250/2	QQ-A-250/2	QQ-A-250/4	QQ-A-250/5	—	—
ISO Material Designation (ISO 209-1)	AlMn1Cu	AlMn1Cu	AlCu4Mg1	AlCu4Mg1	AlMg1(B)	AlMg1(B)
ISO Panel Specifications	209-1, 1514	209-1, 1514, 10546-Class 3	209-1	209-1	209-1	209-1, 10546-Class 3
Surface Finish	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth
Surface Treatment	Bare	Chromate	Bare	Alclad	Bare	Chromate
Tensile Strength* (kpsi)	20 - 26	20 - 26	63 min	61 min	20 - 26	20 - 26
Tensile Strength* (MPa)	140 - 180	140 - 180	435 min	420 min	145 -185	145 - 185
Min Yield Strength* (kpsi)	17	17	42	40	15	15
Min Yield Strength* (MPa)	115	115	290	270	115	115

* Per ASTM B209-07 and B209M-07

B) Q-PANEL Chemical Composition

Table 3. Percent Chemical Composition of Aluminum Panels (All values shown are % maximum unless shown as a range)

	Type A	Type AL	Type AR	Type AD Clad Surface	Type AD Core	Type AQ	Type ALQ
Aluminum	Remainder	Remainder	Remainder	99.3 min.	Remainder	Remainder	Remainder
Chromium	—	—	0.10	—	0.10	0.10	0.10
Copper	0.05 - 0.20	0.05 - 0.20	3.80 - 4.90	0.10	3.80 - 4.90	0.20	0.20
Iron	0.70	0.70	0.50	—	0.50	0.70	0.70
Manganese	1.00 - 1.50	1.00 - 1.50	0.30 - 0.90	0.05	0.30 - 0.90	0.20	0.20
Magnesium	—	—	1.20 - 1.80	0.05	1.20 - 1.80	0.50 - 1.10	0.50 - 1.10
Silicon	0.60	0.60	0.50	—	0.50	0.30	0.30
Titanium	—	—	0.15	0.03	0.15	—	—
Zinc	0.10	0.10	0.25	0.10	0.25	0.25	0.25
Iron + Silicon	—	—	—	0.70	—	—	—
Others (Each/Total)	0.05/0.15	0.05/0.15	0.05/0.15	0.03/None Listed	0.05/0.15	0.05/0.15	0.05/0.15

C) Q-PANEL Dimensions, Stock Numbers and Box Quantities

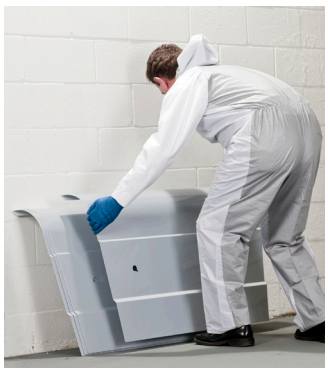
Panel Type & Description	Stock Number	Size (in) W x L (± 0.04, except as noted)	Thickness (in) (± 0.002, except as noted)	Size (mm) W x L (± 1, except as noted)	Thickness (mm) (± 0.05, except as noted)	Box Qty	In Stock?	
							US	EU
Type A Bare Surface Smooth Mill Finish	A-1.75-5	1.75 x 5	0.025	44 x 127	0.64	800	●	●
	A-2-3.5	2 x 3.5	0.025	51 x 89	0.64	500	●	●
	A-24	2 x 4	0.025	51 x 102	0.64	450	●	●
	A-2.75-4	2.75 x 4	0.025	70 x 102	0.64	300	●	○
	A-35	3 x 5	0.025	76 x 127	0.64	500	●	●
	A-36	3 x 6	0.025	76 x 152	0.64	500	●	●
	A-39	3 x 9	0.025	76 x 229	0.64	150	○	○
	A-46	4 x 6	0.025	102 x 152	0.64	250	●	●
	A-48	4 x 8	0.025	102 x 203	0.64	150	●	●
	A-412	4 x 12	0.025	102 x 305	0.64	125	●	●
	A-612	6 x 12	0.025	152 x 305	0.64	125	●	●
Type AL Chromated Surface Smooth Mill Finish	AL-2-3.5	2 x 3.5	0.025	51 x 89	0.64	500	●	●
	AL-35	3 x 5	0.025	76 x 127	0.64	500	●	●
	AL-36	3 x 6	0.025	76 x 152	0.64	500	●	●
	AL-39	3 x 9	0.025	76 x 229	0.64	150	○	○
	AL-46	4 x 6	0.025	102 x 152	0.64	250	●	●
	AL-48	4 x 8	0.025	102 x 203	0.64	150	○	○
	AL-412	4 x 12	0.025	102 x 305	0.64	125	●	●
	AL-612	6 x 12	0.025	152 x 305	0.64	125	●	●
Type AD Alclad Surface	AD-14*	1 x 4 (± 0.01)	0.0630 (± 0.0024)	25 x 102 (± 0.25)	1.60 (± 0.06)	600	●	●
Type AR Bare Surface	AR-14*	1 x 4 (± 0.01)	0.0630 (± 0.0024)	25 x 102 (± 0.25)	1.60 (± 0.06)	600	●	●
Type AQ Bare Surface	AQ-24	2 x 4	0.032	51 x 102	0.81	600	○	●
	AQ-36	3 x 6	0.032	76 x 152	0.81	400	○	●
	AQ-44	4 x 4	0.032	102 x 102	0.81	200	○	●
	AQ-46	4 x 6	0.032	102 x 152	0.81	300	○	●
	AQ-48	4 x 8	0.032	102 x 203	0.81	125	○	●
	AQ-412	4 x 12	0.032	102 x 305	0.81	100	○	●
	AQ-2.36-5.51	2.36 x 5.51	0.032	60 x 140	0.81	250	○	●
	AQ-612	6 x 12	0.032	152 x 305	0.81	100	○	●
Type ALQ Chromated Surface Smooth Mill Finish	ALQ-36	3 x 6	0.032	76 x 152	0.81	400	○	●
	ALQ-46	4 x 6	0.032	102 x 152	0.81	300	○	●
	ALQ-412	4 x 12	0.032	102 x 305	0.81	100	○	●
Type SPC Coated Auto Style	SPC-1524*	15 x 24	0.025	381 x 610	0.64	10	○	○
Type SPA Bare Auto Style	SPA-1524*	15 x 24	0.025	381 x 610	0.64	10	○	○
Type L Large Display Panel Round Corners/Hole	L-1424	14 x 24	0.025	356 x 610	0.64	10	○	○

* No Q-Shaped Hole ● Typically in stock ○ Special order

D) Curved and Custom Panels

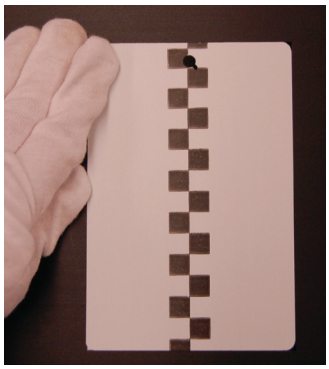
In addition to our standard panels, we can also make types and sizes not shown in this specification bulletin. These include custom panels as small as 1" (2.54 cm) circles, to as large as 5 ft x 5 ft (1.5 m x 1.5 m) automotive-sized panels. Custom panels may also be ordered in a variety of shapes, alloys and finishes. This includes curved, bent, shot-blasted, welded, dimpled, perforated, pre-coated with a variety of colors and patterns and other options.

These custom panels are most cost-effective when there are quantities sufficient to allow an economical production run, and when the material is available from our stock metal or readily available alloys. Contact Q-Lab with your custom panel specifications now!



The Q-PANEL automotive refinish training system is a cost-effective simulation of hoods and fenders.

Some aluminum panels of 3" or wider can be curved with a minimum order of 100 panels.



A variety of different pre-painted, patterned and other specialty panels can be made upon request.

Cleaning and Packaging

Our production process thoroughly cleans the panels and removes any oil or contaminants that might be on the surface. Steel panels are packed in plastic bags with vapor phase rust inhibitor and shipped in a sturdy cardboard carton. With this multilayer packaging, our steel panels may have a shelf life of up to 10 years. In most cases the panels can be used right out of the package. However, for critical applications it may sometimes be necessary to remove traces of the rust inhibitor with a distilled water or MEK wipe prior to coating the panel.

Quantity Discounts

Quantity discounts are available. Please consult with Q-Lab or your local representative for details.

Satisfaction Guaranteed

If the panels do not meet your expectations of quality, you may return them for a full refund or replacement. Just call for a return authorization number. For other returns and replacements, a 15% restocking fee will be charged ($50 minimum). Q-Lab Corporation makes no other warranties, including implied warranties of merchantability or fitness for a particular purpose, except as may be expressly provided by Q-Lab Corporation in writing. Q-Lab Corporation shall not be liable for any incidental, consequential, special or contingent damages arising out of the sale or use of any product. Warranty is only valid on shipments within the United States. Due to shipping circumstances beyond our control, we are not able to offer warranties on exported panels.

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